**Detailed List of Skills for the Unit 2, Part 3 Notes – Macromolecules**

AP Biology

For this notes packet, you should be able to…

1. Identify the functional groups present on an image of a molecule and predict whether the molecule is polar or non-polar based on the presence of these functional groups.

**Location within the Notes:** B

**Questions on Assignments that Relate to this Skill:** #1 and #2 in the Notes Questions, #13 and #14 in the Review Packet (Must Knows)

1. Describe the process of dehydration synthesis and hydrolysis using the terms monomer and polymer. Also, be able to recognize images of each process.

**Location within the Notes:** C

**Questions on Assignments that Relate to this Skill:** #4 and #5 in the Notes Questions, #15 and #16 in the Review Packet (Must Knows)

1. Identify the elements found in each of the four macromolecules (i.e. carbohydrates, lipids, proteins, and nucleic acids) and their relative proportions.

**Location within the Notes:** D, E, F, and G

**Questions on Assignments that Relate to this Skill:** #6 in the Notes Questions

1. Identify the functions of each of the four macromolecules.

**Location within the Notes:** D, E, F, and G

**Questions on Assignments that Relate to this Skill:** #6 in the Notes Questions

1. Identify names and examples of monomers for each of the four macromolecules. Also, be able to recognize images of monomers for each of the four macromolecules and label the parts of these monomers.

**Location within the Notes:** D, E, F, and G

**Questions on Assignments that Relate to this Skill:** #5, #6, and #13 in the Notes Questions, Macromolecules Image Assignment, #17 and #22 in the Review Packet (Must Knows)

1. Identify names and examples of polymers for each of the four macromolecules. Also, be able to recognize images of polymers for each of the four macromolecules and label the parts of these polymers.

**Location within the Notes:** D, E, F, and G

**Questions on Assignments that Relate to this Skill:** #6 in the Notes Questions, #8 and #11 in the Notes Questions, Connecting Structure to Function in Carbohydrates and Lipids Assignment, Macromolecules Image Assignment, #17, #18, and #22 in the Review Packet (Must Knows)

1. Identify the types of bonds found in each of the four macromolecules. Also, be able to recognize these bonds in images of the four macromolecules.

**Location within the Notes:** D, E, F, and G

**Questions on Assignments that Relate to this Skill:** #18 in the Review Packet (Must Knows)

1. Identify the structural differences between starch and cellulose, and explain how cellulose’s structure contributes to its function.

**Location within the Notes:** D

**Questions on Assignments that Relate to this Skill:** #7 in the Notes Questions

1. Provide examples of saturated and unsaturated fats and explain how their structure results in their liquid vs. solid properties.

**Location within the Notes:** E

**Questions on Assignments that Relate to this Skill:** #8 in the Notes Questions, Connecting Structure to Function in Carbohydrates and Lipids Assignment, #19 in the Review Packet (Must Knows)

1. Explain how the structure of phospholipid molecules contributes to the formation of a phospholipid bilayer (i.e., the cell membrane)

**Location within the Notes:** E

**Questions on Assignments that Relate to this Skill:** #9 in the Notes Questions, #21 in the Review Packet (Must Knows)

1. Identify the types of bonds involved in each of the four levels of protein structure—primary, secondary, tertiary, and quaternary—and the types of structures (ex: alpha helix and beta pleated sheet) seen at each level.

**Location within the Notes:** F

**Questions on Assignments that Relate to this Skill:** #12 in the Notes Questions

1. Identify the factors that can cause a protein to denature and describe what happens during protein denaturation.

**Location within the Notes:** F

**Questions on Assignments that Relate to this Skill:**

1. Provide examples of how the structure of molecules contributes to their function (ex: testosterone vs. estrogen, starch vs. cellulose, normal hemoglobin vs. sickle cell hemoglobin).

**Location within the Notes:** Throughout the Notes

**Questions on Assignments that Relate to this Skill:** #3 in the Notes Questions, Connecting Structure to Function in Carbohydrates and Lipids Assignment, #20 in the Review Packet (Must Knows)